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The observatory building, framed by trees on its summit, was impressive in its quiet and unique isolation, so near a great centre of life.

The new observatory is built in an unimproved portion of the City Park, and has nothing within reach that will interfere with good conditions for observing. The neighborhood will be in the future the residence part of the city, but the observatory will always command the needed isolation. It is accessible by electric tram, within easy walking distance, and has improved equipment, of which mention has already been made in this journal.

The change of site has only been accomplished after long effort, deferred more than once when it seemed as if to be realized. The successful establishment of the new DUDLEY is a gain to the science to which it is dedicated and a just reward to the energy and ability which have made it possible.

R. H. T.

PORTRAIT MEDALLION OF JAMES LICK.

A bronze portrait medallion of JAMES LICK, made by Mr. F. M. WELLS, in 1888, has been sent to the LICK Observatory by the LICK Trustees. It is mounted on the wall of the main vestibule, facing the principal entrance, over a bronze tablet with the inscription:

LICK ASTRONOMICAL DEPARTMENT
OF THE
UNIVERSITY OF CALIFORNIA.

STAR SPECTRA IN WHICH TWO OR MORE OF THE HYDROGEN LINES ARE BRIGHT.

In *Astronomische Nachrichten*, No. 2963, ESPIN called attention to the fact that the $H\beta$ hydrogen line is very bright in ϕ *Persei*. Shortly afterward I examined the spectrum of that star and found $H\alpha$ to be very much brighter than $H\beta$, as it is at present. I supposed the bright $H\alpha$ line was well known, but am unable to find any statement that it has been observed by others.

Professor PICKERING and Mrs. M. FLEMING have announced in various places that the DRAPER Catalogue photographs show the $H\beta$ line to be bright in the stars ψ *Persei*, π *Aquarii*, κ

Draconis, *v Cygni*, *v Sagittarii*, χ *Ophiuchi*, and Cord. Genl. Catal. 7191. I have examined the spectra of all these stars, and in every case the $H\alpha$ hydrogen line is bright and very much easier to observe than the $H\beta$ line. The hydrogen lines in the violet of these stars are probably dark, for the most part; but photographs of the region $H\beta$ to $H\delta$ of some of these stars show peculiarities of considerable interest, and make a detailed investigation desirable. Thus, in ϕ *Persei* the $H\gamma$ and $H\delta$ lines consist each of two narrow bright lines about four tenth-metres apart upon a background but slightly darker than the ordinary continuous spectrum. In *v Cygni* $H\beta$, $H\gamma$ and $H\delta$ consist of narrow bright lines upon broad and nearly dark backgrounds.

Miss A. C. MAURY found from the DRAPER Catalogue plates that $H\beta$ and possibly $H\gamma$ in the spectrum of *Pleione* consist each of a narrow bright line on a dark background. The $H\alpha$ line is bright in this star. Other observers have possibly called attention to that fact, but I am unable to find any such reference.

Qualitative investigations of these spectra cannot be made advantageously by photography with the 36-inch telescope, owing to the large chromatic aberration of the great lenses in the blue and violet.

W. W. C.

October 19, 1893.

PRELIMINARY DETERMINATION OF THE ECCENTRICITY OF THE REPSOLD MERIDIAN CIRCLE.

A series of readings was taken upon the east circle, the fixed one, on November 18. The series consists of readings, each 30° , beginning at the nadir setting, through 360° ; then reversing the order of settings back to the starting point.

Denoting by c , the reading of the circle at microscope H, the correction for eccentricity for each microscope will be represented by the following:

$$\begin{array}{ll} \text{For Micros. H} & e = 2''.85 \sin (c + 243^\circ 45') \\ \text{" G} & e = 2''.85 \sin (c + 153^\circ 45') \\ \text{" F} & e = 2''.85 \sin (c + 63^\circ 45') \\ \text{" E} & e = 2''.85 \sin (c + 333^\circ 45') \end{array}$$

The correction for runs was applied to each microscope; and the position of each, with reference to the mean of four, was taken out from the whole series.

Since the change for any one of the four did not much exceed